

IN THE CLAIMS:

Please amend claims 1-30 and add new claims 31 and 32 as follows.

1. (Currently Amended) A method ~~for implementing an adaptive channel estimator~~, comprising:

determining from a received signal at least one variable representing statistical characteristics of ~~the~~ a channel; ~~;~~

determining a prefilter ~~by means of~~ using at least one variable representing the statistical characteristics of the channel; ~~;~~ and

adapting sample rate of ~~the~~ a prefilter output of the prefilter for an adaptive channel estimator.

2. (Currently Amended) The method of claim 1, wherein the using the at least one ~~the statistical variable is~~ comprises using at least one of Doppler spread, ~~the form of~~ Doppler power spectrum, ~~the width of~~ Doppler power spectrum, ~~the speed of a radio~~ transmitter, channel coherence time, correlation between channel measurements, or signal-to-noise ratio.

3. (Currently Amended) The method of claim 1, wherein the adapting of the sample rate ~~is adapted~~ comprises adapting the sample rate by decimation.

4. (Currently Amended) The method of claim 1, wherein the adapting of the sample rate is adapted comprises adapting the sample rate by interpolation.

5. (Currently Amended) The method of claim 1, wherein the adapting of the sample rate is adapted comprises adapting the sample rate in relation to the a prefilter input signal and the at least one variable representing the statistical characteristics of channel determined from the received signal.

6. (Currently Amended) The method of claim 1, ~~wherein~~ further comprising:
configuring the a length of the channel estimator is to be constant.

7. (Currently Amended) The method of claim 1, ~~wherein~~ further comprising:
measuring the Doppler spread is measured at the a prefilter input.

8. (Currently Amended) The method of claim 1, ~~wherein~~ further comprising:
measuring the Doppler spread is measured at the prefilter output.

9. (Currently Amended) The method of claim 1, ~~wherein~~ further comprising:
using feedback at the prefilter output to keep the Doppler spread or the correlation between the channel measurements ~~are kept at least substantially constant by means of~~
~~feedback at the prefilter output.~~

10. (Currently Amended) The method of claim 1, ~~wherein further comprising:~~
~~configuring the bandwidth of the decimator and interpolator filters to changes~~
~~change~~ in relation to a change in the sample rate.

11. (Currently Amended) A prefiltering arrangement ~~for implementing an adaptive~~
~~channel estimator, the prefiltering arrangement comprising:~~

~~a first determination unit configured to determine, means for determining from a~~
received signal₁ at least one variable representing statistical characteristics of ~~the a~~
channel₁;

~~a second determination unit configured to determine means for determining the a~~
number of prefilter taps ~~of a prefilter by means of using~~ at least one variable representing
the statistical characteristics of the channel₁; ~~and~~

~~an adaptation unit configured to adapt means for adapting sample rate of the a~~
prefilter output ~~of the prefilter for an adaptive~~ channel estimator.

12. (Currently Amended) The prefiltering arrangement of claim 11, wherein the
statistical variable ~~is comprises at least one of~~ Doppler spread, form of Doppler power
spectrum, width of Doppler power spectrum, speed of a radio transmitter, channel
coherence time, correlation between channel measurements₁ or signal-to-noise ratio.

13. (Currently Amended) The prefiltering arrangement of claim 11, ~~the arrangement comprising means for adapting wherein the adaptation unit is configured to~~ adapt the sample rate by decimation.

14. (Currently Amended) The prefiltering arrangement of claim 11, ~~the arrangement comprising means for adapting wherein the adaptation unit is configured to~~ adapt the sample rate by interpolation.

15. (Currently Amended) The prefiltering arrangement of claim 11, ~~the arrangement comprising means for adapting wherein the adaptation unit is configured to~~ adapt the sample rate in relation to ~~the a~~ a prefilter input signal and the at least one variable representing the statistical characteristics of the channel determined from the received signal.

16. (Currently Amended) The prefiltering arrangement of claim 11, wherein ~~the a~~ a length of the channel estimator is constant.

17. (Currently Amended) The prefiltering arrangement of claim 11, ~~wherein the arrangement comprises~~ further comprising:

a measurement unit configured to measure ~~means for measuring~~ Doppler spread at ~~the a~~ a prefilter input.

18. (Currently Amended) The prefiltering arrangement of claim 11, ~~wherein the arrangement comprises~~ further comprising:

a measurement unit configured to measure ~~means for measuring~~ Doppler spread at the prefilter output.

19. (Currently Amended) The prefiltering arrangement of claim 11, wherein the arrangement is configured to keep ~~the~~ Doppler spread or the correlation between the channel measurements ~~is kept at least substantially constant by means of~~ using feedback at the prefilter output.

20. (Currently Amended) The prefiltering arrangement of claim 11, wherein the bandwidth of ~~the~~ decimator and interpolator filters is configured to ~~changes~~ change in relation to a change in the sample rate.

21. (Currently Amended) A base station, ~~in which a channel estimator input signal is adapted, the base station comprising~~:

a first determination unit configured to determine ~~means for determining~~ from a received signal at least one variable representing statistical characteristics of the channel;

;

a second determination unit configured to determine ~~means for determining the a~~
number of prefilter taps of a prefilter ~~by means of using~~ at least one variable representing
the statistical characteristics of the channel; and

an adaptation unit configured to adapt ~~means for adapting sample rate of the a~~
prefilter output of the prefilter for a channel estimator.

22. (Currently Amended) The base station of claim 21, wherein the statistical
variable ~~is comprises~~ at least one of Doppler spread, form of Doppler power spectrum,
width of Doppler power spectrum, speed of a radio transmitter, channel coherence time,
correlation between channel measurements, or signal-to-noise ratio.

23. (Currently Amended) The base station of claim 21, wherein the ~~base station~~
~~comprises means for adapting~~ adaptation unit is configured to adapt the sample rate by
decimation.

24. (Currently Amended) The base station of claim 21, wherein the ~~base station~~
~~comprises means for adapting~~ adaptation unit is configured to adapt the sample rate by
interpolation.

25. (Currently Amended) The base station of claim 21, wherein the ~~arrangement~~
~~comprises means for adapting~~ adaptation unit is configured to adapt the sample rate in

relation to ~~the~~ a prefilter input signal and the variable representing the statistical characteristics of the channel determined from the received signal.

26. (Currently Amended) The base station of claim 21, wherein ~~the~~ a length of the channel estimator is constant.

27. (Currently Amended) The base station of claim 21, ~~wherein the arrangement comprises~~ further comprising:

a measurement unit configured to measure ~~means for measuring the~~ Doppler spread at ~~the~~ a prefilter input.

28. (Currently Amended) The base station of claim 21, ~~wherein the arrangement comprises~~ further comprising:

a measurement unit configured to measure ~~means for measuring the~~ Doppler spread at the prefilter output.

29. (Currently Amended) The base station of claim 21, wherein the base station is configured to keep ~~the~~ Doppler spread or the correlation between the channel measurements ~~is kept~~ at least substantially constant at the prefilter output.

30. (Currently Amended) The base station of claim 21, wherein the bandwidth of the decimator and interpolator filters is configured to changes-change in relation to a change in the sample rate.

31. (New) A prefiltering arrangement, comprising:

first determination means for determining from a received signal at least one variable representing statistical characteristics of a channel;

second determination means for determining the number of prefilter taps of a prefilter using at least one variable representing the statistical characteristics of the channel; and

adaptation means for adapting sample rate of a prefilter output of the prefilter for an adaptive channel estimator.

32. (New) A base station, comprising:

first determination means for determining from a received signal at least one variable representing statistical characteristics of a channel;

second determination means for determining the number of prefilter taps of a prefilter using at least one variable representing the statistical characteristics of the channel; and

adaptation means for adapting sample rate of a prefilter output of the prefilter for an adaptive channel estimator.